



Univerza v Mariboru

Fakulteta za naravoslovje
in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS						
Predmet:	Teorija množic					
Course title:	Set Theory					
Študijski program in stopnja Study programme and level	Študijska smer Study field			Letnik Academic year	Semester Semester	
Matematika				1.	2.	
Mathematics				1.	2.	
Vrsta predmeta / Course type				Obvezni / Compulsory		
Univerzitetna koda predmeta / University course code:						
Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Laboratory work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
45		30			105	6
Nosilec predmeta / Lecturer:				Uroš MILUTINOVIĆ		
Jeziki / Languages:	Predavanja / Lectures:	SLOVENSKO/SLOVENE				
	Vaje / Tutorial:	SLOVENSKO/SLOVENE				
Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:				Prerequisites:		
Jih ni.				There are none.		
Vsebina:				Content (Syllabus outline):		
Osnovni pojmi matematične logike. Načini zapisovanja množic. Osnovne relacije med množicami, osnovne operacije z množicami ali družinami množic. Relacije. Ekvivalenčne relacije. Ureditev. Dobra ureditev. Matematična indukcija. Funkcije. Posebni tipi funkcij.				The basic notions of mathematical logic. The methods of denoting sets. The basic relations among sets, the basic operations on sets or families of sets. Relations. Equivalence relations. Order. Well order. Mathematical induction. Functions. Special types of functions.		
Končne in neskončne, števne in neštevne množice.				Finite and infinite, countable and uncountable sets.		
Osnovno o kardinalnih in ordinalnih številih.				Fundamentals of cardinal and ordinal numbers.		

Temeljni literatura in viri / Readings:

N.Prijatelj: Matematične strukture I, Ljubljana, Društvo matematikov, fizikov in astronomov Slovenije, 1996

R.R.Stoll: Set theory and logic, New York, Dover Publications, 1979

S.Lipschutz: Schaum's outline of theory and problems of set theory and related topics, New York (etc.), McGraw-Hill, 1998

Cilji in kompetence:

Obvladati osnovne pojme in rezultate iz matematične logike in teorije množic.

Objectives and competences:

Students learn how to use the basic notions and results of mathematical logic and set theory.

Predvideni študijski rezultati:

Znanje in razumevanje:

- Uporaba osnovnih pojmov matematične logike (izjava, predikat, logične operacije, kvantifikatorja)
- Uporaba osnovnih pojmov in rezultatov iz teorije množic (množice, operacije z množicami in družinami množic, relacije, funkcije, kardinalna in ordinalna števila).

Prenesljive/ključne spretnosti in drugi atributi:

- Pridobljena znanja so osnova za vse druge matematične predmete.

Intended learning outcomes:

Knowledge and Understanding:

Be able to use the basic notions of mathematical logic (propositions, predicates, logical operations, quantifiers)

Be able to use the basic notions and results of set theory (sets, operations on sets and families of sets, relations, functions, cardinal and ordinal numbers)

Transferable/Key Skills and other attributes:

- The obtained knowledge forms a foundation for all the other mathematical subjects.

Metode poučevanja in učenja:

- Predavanja
- Teoretične vaje

Learning and teaching methods:

Lectures
Theoretical exercises

Načini ocenjevanja:

Način (pisni izpit, ustno izpraševanje, naloge, projekt)

Izpit:

Pisni izpit – problemi

Ustni izpit – teorija

Vsaka izmed naštetih obveznosti mora biti opravljena s pozitivno oceno.

Pozitivna ocena pri pisnem izpitu - problemi je pogoj za pristop k ustnemu izpitu – teorija.

Delež (v %) /
Weight (in %)

50%

50%

Assessment:

Type (examination, oral, coursework, project):

Exams:

Written exam – problems

Oral exam – theory

Each of the mentioned assessments must be assessed with a passing grade.

Passing grade of the written exam – problems is required for taking the oral exam – theory.

Written exam – problems can be replaced by two mid-term tests.

Pisni izpit – problemi se lahko nadomesti z dvema delnima testoma (ki sta sprotni obveznosti).		
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Reference nosilca / Lecturer's references:

1. BANIČ, Iztok, ČREPNIJAK, Matevž, MERHAR, Matej, MILUTINOVIĆ, Uroš, SOVIČ, Tina. The closed subset theorem for inverse limits with upper semicontinuous bonding functions. Bulletin of the Malaysian Mathematical Society, ISSN 0126-6705, 2019, vol. 42, iss. 3, str. 835-846, doi: 10.1007/s40840-017-0517-5. [COBISS.SI-ID 23281928].
2. BANIČ, Iztok, ČREPNIJAK, Matevž, MERHAR, Matej, MILUTINOVIĆ, Uroš. The (weak) full projection property for inverse limits with upper semicontinuous bonding functions. Mediterranean journal of mathematics, ISSN 1660-5446, Aug. 2018, vol. 15, iss. 4, str. 1-21, doi: 10.1007/s00009-018-1209-6. [COBISS.SI-ID 23960328].
3. BANIČ, Iztok, ČREPNIJAK, Matevž, MERHAR, Matej, MILUTINOVIĆ, Uroš, SOVIČ, Tina. An Anderson-Choquet-type theorem and a characterization of weakly chainable continua. Mediterranean journal of mathematics, ISSN 1660-5446, 2017, vol. 14, iss. 2, str. 1-14, doi: 10.1007/s00009-017-0868-z. [COBISS.SI-ID 22997512]
4. BANIČ, Iztok, ČREPNIJAK, Matevž, ERCEG, Goran, MERHAR, Matej, MILUTINOVIĆ, Uroš. Inducing functions between inverse limits with upper semicontinuous bonding functions. Houston journal of mathematics, ISSN 0362-1588, 2015, vol. 41, no. 3, str. 1021-1037. [COBISS.SI-ID 21550856]
5. BANIČ, Iztok, ČREPNIJAK, Matevž, MERHAR, Matej, MILUTINOVIĆ, Uroš. Inverse limits, inverse limit hulls and crossovers. Topology and its Applications, ISSN 0166-8641. [Print ed.], 2015, vol. 196, str. 155-172, doi: 10.1016/j.topol.2015.09.040. [COBISS.SI-ID 21615112]